

nyhart

***Indiana State Teachers'
Retirement Fund***

***Annual Actuarial Valuation
June 30, 2013***

Indiana State Teachers' Retirement Fund

Annual Actuarial Valuation

as of June 30, 2013

Nyhart

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December 17, 2013

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***The Board of Trustees
Indiana Public Retirement System
Indianapolis, IN***

Dear Board Members:

An actuarial valuation is prepared annually for the Indiana State Teachers' Retirement Fund. Submitted in this report are the results of the June 30, 2013 actuarial valuation.

Census Data and Asset Information

The member census data and the asset information for this valuation were furnished by the Chief Financial Officer and Staff. Their efforts and cooperation in furnishing these materials are acknowledged with appreciation. We did not audit the information provided, but we did review it thoroughly for reasonableness and compared it with the prior year's submission for consistency.

Assumptions and Methods

The majority of the actuarial assumptions used in the June 30, 2013 valuation were adopted by the Board pursuant to the Experience Study completed in June 2012, which reflected the experience period from July 1, 2007 to June 30, 2011. The interest rate and mortality assumptions were approved by the Board on June 29, 2012 for first use in the 2012 valuation. Assumptions are summarized in the Assumptions and Methods section of this report. These assumptions and methods have been used to develop the Annual Required Contribution and are consistent with the accounting requirements detailed in GASB Statements No. 25, No. 27, and No. 50.

Funding Objective

The Indiana State Teachers' Retirement Fund Pre-1996 Account is funded on a pay-as-you-go basis from the State of Indiana.

The funding objective of the Indiana State Teachers' Retirement Fund 1996 Account is to establish and receive contributions that, when invested at the assumed rate of return, will ultimately accumulate assets over each member's working lifetime that will be sufficient to pay expected retirement allowances. As such, an employer contribution rate is calculated each year. That rate is then considered in conjunction with the goal of maintaining a relatively stable contribution over time.

Fund Structure

The Indiana State Teachers' Retirement Fund (TRF) is one fund comprised of a two-account structure in compliance with Indiana Code Section 5-10.4-2-2:

1. The Pre-1996 Account consists of members who were hired prior to July 1, 1995, and who have maintained continuous employment with the same school corporation or covered institution since that date.
2. The 1996 Account consists of members who were:
 - a. hired on or after July 1, 1995; or
 - b. hired before July 1, 1995, and prior to June 30, 2005:
 - i. were either hired by another school corporation or institution covered by TRF, or
 - ii. were re-hired by a covered prior employer.

Characteristics of the Pre-1996 Account

1. Active membership in the Pre-1996 Account continues to decline as members quit, become disabled, die, or retire.
2. The Defined Benefits from the Pre-1996 Account are funded by State appropriations (including contributions of some revenue from the State Lottery). At the time of retirement, Annuity Savings Account (ASA) benefits payable from the Pre-1996 Account are funded by the annuitization of Pre-1996 Account member contributions.

Characteristics of the 1996 Account

1. As members depart from active service in the Pre-1996 Account, their replacements will become members of the 1996 Account. If the 1996 Account were a stand-alone plan, this pattern of departures and hirings would produce a fairly constant population size.
2. Defined Benefits payable from the 1996 Account are funded by contributions from local school corporations or other institutions that employ covered members. At the time of retirement, ASA benefits payable from the 1996 Account are funded by the annuitization of 1996 Account member contributions.

Funding Arrangements

Prior to the legislation that established the two-account structure of TRF, the Defined Benefits of the Indiana State Teachers' Retirement Fund were funded with a pay-as-you-go method. Under this arrangement, amounts were appropriated to meet the current year's pension payment requirements. Defined Benefits payable from the Pre-1996 Account continue to be funded on this basis.

In 1995, the Pension Stabilization Fund was set up for the Pre-1996 Account. Since then, some pre-funding progress has been made via State appropriations to this account.

Defined Benefits payable from the 1996 Account are funded through employer percent-of-pay contributions. The Board of the Indiana Public Retirement System sets this contribution rate after reviewing the most recent actuarial valuation report.

The contribution rate of 7.50% for fiscal year 2014 was set by the Board in fiscal year 2013 for the 1996 Account. The contribution rate of 7.50% for fiscal year 2015 was set by the Board in fiscal year 2014.

Progress Toward Realization of Financing Objectives

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a Plan's funded status. In the absence of benefit improvements, it should increase over time, until it reaches 100%. The total funded ratio for the Plan (Pre-1996 Account and 1996 Account combined) increased by 3.0%, to 45.7% from 42.7% for the preceding year due primarily to additional funding by the State under HB 1376 and 2010 – 2013 investment returns being higher than the actuarial assumed returns.

The funded ratio of the Pre-1996 Account (pay-as-you-go) increased to 31.8% from 30.1% for the preceding year. Based on the actuarial assumptions, it is anticipated that the Pre-1996 Account will attain 100% funded status in FY2036.

The funded ratio of the 1996 Account increased to 93.8% from 90.7% for the preceding year. Based on the actuarial assumptions, it is anticipated that the 1996 Account will attain 100% funded status in FY2021.

Certification

We have included several schedules and exhibits in this report, including the following:

Summary of Actuarial Assumptions and Methods

Analysis of Financial Experience

Solvency Test

Schedule of Active Members' Valuation Data

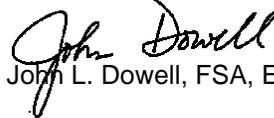
Schedule of Retired Members and Beneficiaries

Schedule of Funding Progress

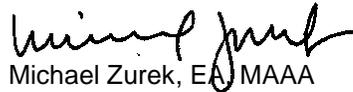
Schedule of Employer Contributions

The valuation was completed under the supervision of a Member of the American Academy of Actuaries with significant experience in valuing employee retirement systems, and was prepared using generally accepted actuarial principles and in accordance with standards of practice prescribed by the Actuarial Standards Board. To the best of our knowledge, this report is complete and accurate and the actuarial methods and assumptions produce results that are reasonable.

Respectfully submitted,



John L. Dowell, FSA, EA, MAAA



Michael Zurek, EA, MAAA

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Comments

Contribution Rates

The Calculated Contribution Rate section shows the calculated rate for the 1996 Account. That rate is determined as if the 1996 Account were a stand-alone plan.

This section also shows the calculated contribution rate for the Pre-1996 Account. Since the Pre-1996 Account is funded on a pay-as-you-go basis, the expected benefit payments are also shown in the Calculated Contribution Rate section. The two rates have been combined to determine the Annual Required Contribution shown in the GASB Disclosures section.

June 30, 2013 assets include the transfer of \$207 million of excess State reserves to the Pension Stabilization Fund under HB 1376. In addition, June 30, 2013 assets include approximately \$20 million appropriated from the State General Fund to cover 13th checks paid in September, 2012.

Plan Provisions

There is no ad-hoc COLA on January 1, 2014. Instead, retirees were paid a service-related lump sum (i.e., referred to as 13th check) in September 2013. These changes are reflected in the June 30, 2013 valuation. Any future COLA is estimated by an ongoing assumption of 1.0% annual increases in all pension payments beginning January 1, 2015. We are not aware of any other material changes in the plan provisions since the June 30, 2012 actuarial valuation.

Census Data

Census data for the valuation was provided by INPRS. We have thoroughly examined the data for reasonableness and consistency with prior years, but we did not otherwise audit it.

Assumptions and Methods

The actuarial assumptions used in the June 30, 2013 valuation are based on plan experience from July 1, 2007 to June 30, 2011. The 6.75% interest rate assumption was approved by the Board on June 29, 2012 for first use in the June 30, 2012 valuation. The cost associated with the conversion of future ASA account balances to annuities was recognized in the June 30, 2013 valuation, which is a change from the prior methodology of recognizing any cost as it occurred. The liability associated with anticipated future ASA conversions was subsequently eliminated with the Board decision to modify ASA annuitizations starting October 1, 2014.

Investment Experience

The investment return for the year ended June 30, 2013 was slightly lower than the assumed 6.75% return. The assets of TRF are commingled with the assets of other funds administered by INPRS. The overall INPRS return on the commingled funds was 6.0% during fiscal 2013. Under the asset valuation method, market gains and losses are spread over a four-year period. The Market Value of Assets is currently \$40 million lower than the Actuarial Value of Assets, meaning the plan is currently in a position of having net deferred investment losses to be recognized in future years.

Challenges

The 1996 Account has been steadily funded since its inception. As membership in that portion of the plan increases, the amount of required contributions will increase as a dollar amount, but should remain relatively stable as a percentage of covered payroll with plan experience causing gradual changes. A significant funding challenge will be for the State to meet the projected pay-as-you-go obligations as shown in the Payout Projections section for the Pre-1996 Account.

Summary of Key Valuation Results

	6/30/2013			6/30/2012
	Pre-1996 Account	1996 Account	Total Fund	
Member Information				
Number				
Active Members	19,210	51,204	70,414	70,573
Inactive Vested Members	3,314	3,103	6,417	6,367
Inactive Nonvested Members	546	11,147	11,693	13,322
Retired Members and Beneficiaries	<u>49,345</u>	<u>3,665</u>	<u>53,010</u>	<u>49,971</u>
Total	72,415	69,119	141,534	140,233
Active Payroll	\$ 1,383,428,013	\$ 2,740,939,967	\$ 4,124,367,980	\$ 4,232,018,389
Annual Benefit Payments				
Annuity	\$ 113,356,896	\$ 7,111,980	\$ 120,468,876	\$ 111,391,128
Pension	<u>860,278,572</u>	<u>60,057,396</u>	<u>920,335,968</u>	<u>842,089,200</u>
Total	\$ 973,635,468	\$ 67,169,376	\$ 1,040,804,844	\$ 953,480,328
Assets and Liabilities				
Accrued Liability				
ASA Account Balance	\$ 1,812,829,927	\$ 991,924,506	\$ 2,804,754,433	\$ 2,873,414,866
ASA Annuities	1,082,701,767	78,374,599	1,161,076,366	1,068,220,320
Pension: Retirees	8,996,399,426	703,495,761	9,699,895,187	8,838,009,418
Pension: Non-retirees	<u>4,570,447,617</u>	<u>2,975,573,809</u>	<u>7,546,021,426</u>	<u>8,080,678,933</u>
Total	\$ 16,462,378,737	\$ 4,749,368,675	\$ 21,211,747,412	\$ 20,860,323,537
Market Value of Assets				
ASA Account Balance	\$ 1,812,829,927	\$ 991,924,506	\$ 2,804,754,433	\$ 2,873,414,866
ASA Annuities	1,082,701,767	78,374,599	1,161,076,366	1,068,220,320
Pension: Retirees	2,319,660,883	703,495,761	3,023,156,644	2,662,775,333
Pension: Non-retirees	<u>0</u>	<u>2,659,891,307</u>	<u>2,659,891,307</u>	<u>2,472,648,706</u>
Total	\$ 5,215,192,577	\$ 4,433,686,173	\$ 9,648,878,750	\$ 9,077,059,225
Actuarial Value of Assets				
ASA Account Balance	\$ 1,812,829,927	\$ 991,924,506	\$ 2,804,754,433	\$ 2,873,414,866
ASA Annuities	1,082,701,767	78,374,599	1,161,076,366	1,068,220,320
Pension: Retirees	2,339,572,220	703,495,761	3,043,067,981	2,581,971,483
Pension: Non-retirees	<u>0</u>	<u>2,680,033,218</u>	<u>2,680,033,218</u>	<u>2,390,954,905</u>
Total	\$ 5,235,103,914	\$ 4,453,828,084	\$ 9,688,931,998	\$ 8,914,561,574
Unfunded Accrued Liability				
ASA Account Balance	\$ 0	\$ 0	\$ 0	\$ 0
ASA Annuities	0	0	0	0
Pension: Retirees	6,656,827,206	0	6,656,827,206	6,256,037,935
Pension: Non-retirees	<u>4,570,447,617</u>	<u>295,540,591</u>	<u>4,865,988,208</u>	<u>5,689,724,028</u>
Total	\$ 11,227,274,823	\$ 295,540,591	\$ 11,522,815,414	\$ 11,945,761,963
Funded Percentage				
ASA Account Balance	100.0%	100.0%	100.0%	100.0%
ASA Annuities	100.0%	100.0%	100.0%	100.0%
Pension: Retirees	26.0%	100.0%	31.4%	29.2%
Pension: Non-retirees	<u>0.0%</u>	<u>90.1%</u>	<u>35.5%</u>	<u>29.6%</u>
Total	31.8%	93.8%	45.7%	42.7%
Pension Normal Cost	\$ 68,860,011	\$ 155,314,388	\$ 224,174,399	\$ 228,679,712
Annual Costs				
		Fiscal 2015		Fiscal 2014
Annual Required Contribution (ARC)	\$ 862,493,100	\$ 194,194,000	\$ 1,056,687,100	\$ 1,074,313,200
1996 Account Only				
Calculated Contribution Rate				
Normal Cost		5.67%		5.68%
Amortization of Unfunded Liability		<u>0.83%</u>		<u>1.16%</u>
Total		6.50%		6.84%
Actual Employer Contribution Rate		7.50%		7.50%
Pre-1996 Account Only				
Expected Pension Benefit Payments	934,300,000			925,500,000
Expected Pension Contributions	832,800,000			828,700,000

Unfunded Accrued Liability

Pre-1996 Account

\$Millions

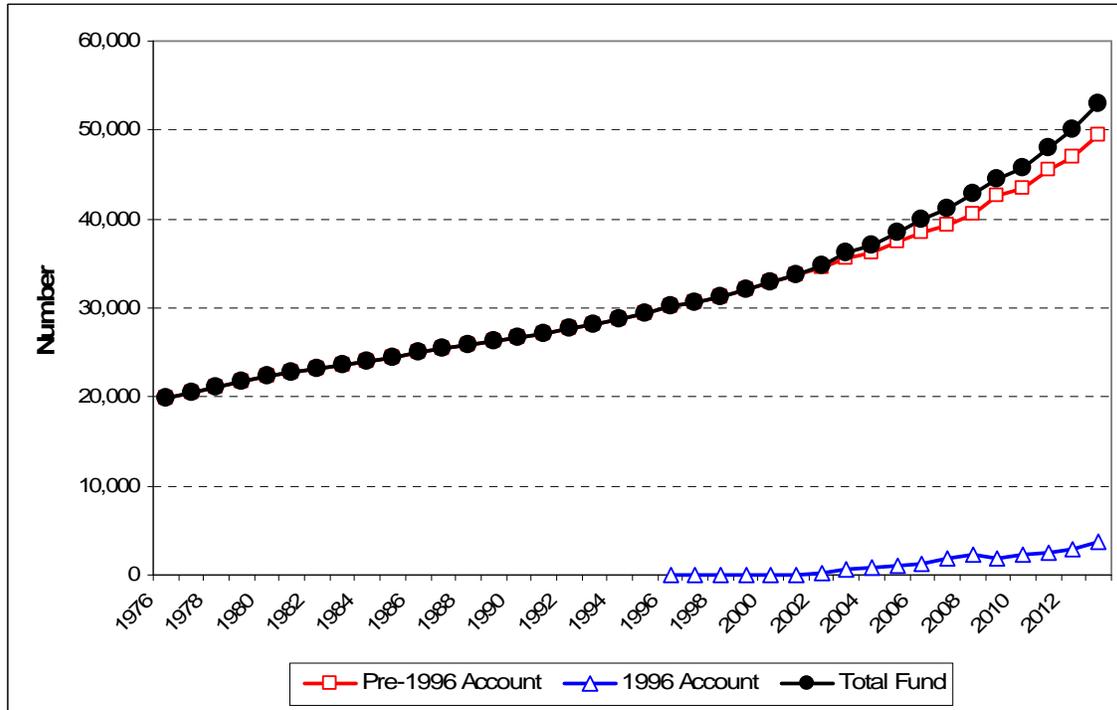
June 30	Accrued Liability	Actuarial Value of Assets	Unfunded Accrued Liability	Funded Percentage
1975	\$ 1,570	\$ 312	\$ 1,258	19.9%
1980	2,843	539	2,304	19.0%
1985	4,023	1,073	2,950	26.7%
1991	7,182	2,161	5,021	30.1%
1992	7,949	2,376	5,573	29.9%
1993	8,508	2,592	5,916	30.5%
1994	9,087	2,809	6,278	30.9%
1995	9,675	2,984	6,691	30.8%
1996	10,283	3,242	7,041	31.5%
1997	10,868	3,678	7,190	33.8%
1998	11,481	4,130	7,351	36.0%
1999	12,173	4,731	7,442	38.9%
2000	12,409	5,210	7,199	42.0%
2001	12,696	5,363	7,333	42.2%
2002	13,498	5,555	7,943	41.2%
2003	13,355	5,728	7,627	42.9%
2004	13,549	5,765	7,784	42.5%
2005	14,254	5,797	8,457	40.7%
2006	15,003	5,478	9,525	36.5%
2007	15,988	5,764	10,224	36.1%
2008	15,792	5,954	9,838	37.7%
2009	16,027	5,109	10,918	31.9%
2010	16,282	5,382	10,900	33.1%
2011	16,318	5,227	11,091	32.0%
2012	16,522	4,978	11,544	30.1%
2013	16,462	5,235	11,227	31.8%

1996 Account

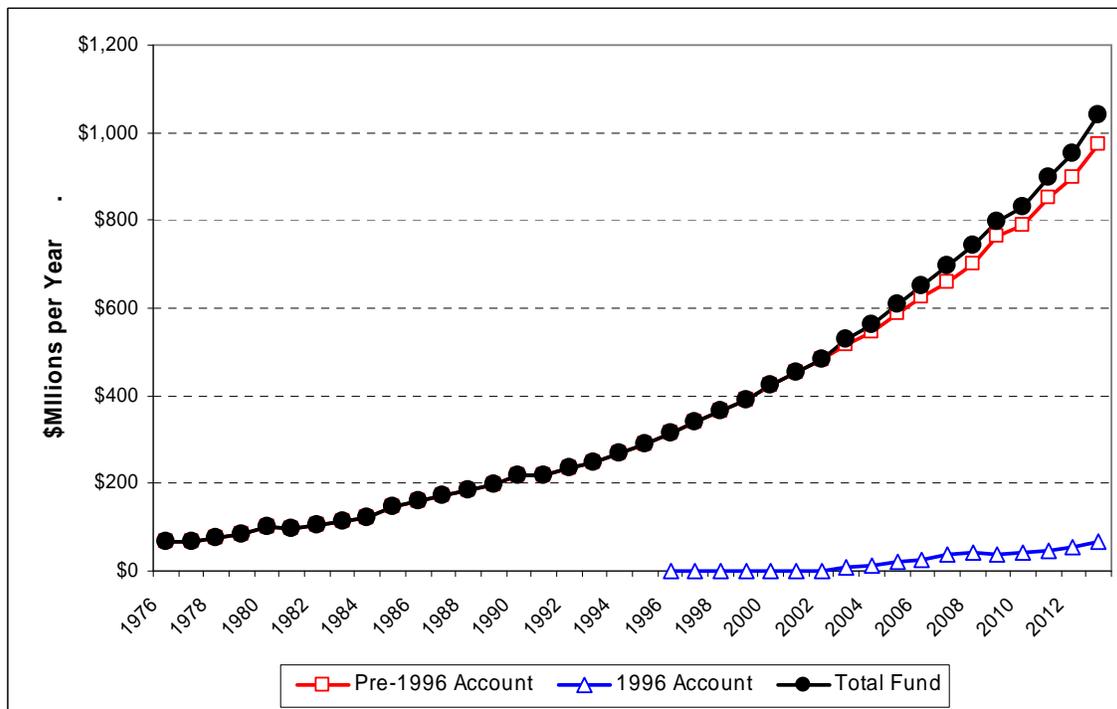
\$Millions

June 30	Accrued Liability	Actuarial Value of Assets	Unfunded Accrued Liability	Funded Percentage
1996	\$ 48	\$ 21	\$ 27	43.8%
1997	176	72	104	40.9%
1998	298	136	162	45.6%
1999	498	240	258	48.2%
2000	706	368	338	52.1%
2001	828	447	381	54.0%
2002	1,167	621	546	53.2%
2003	1,392	826	566	59.3%
2004	1,649	1,039	610	63.0%
2005	2,011	1,268	743	63.1%
2006	2,363	2,209	154	93.5%
2007	2,828	2,713	115	95.9%
2008	2,958	3,080	(122)	104.1%
2009	3,136	2,921	215	93.1%
2010	3,615	3,423	192	94.7%
2011	3,997	3,665	332	91.7%
2012	4,338	3,936	402	90.7%
2013	4,750	4,454	296	93.8%

Retired Members and Beneficiaries Receiving Benefits



Total Retirement Allowances Being Paid



Active Member Data

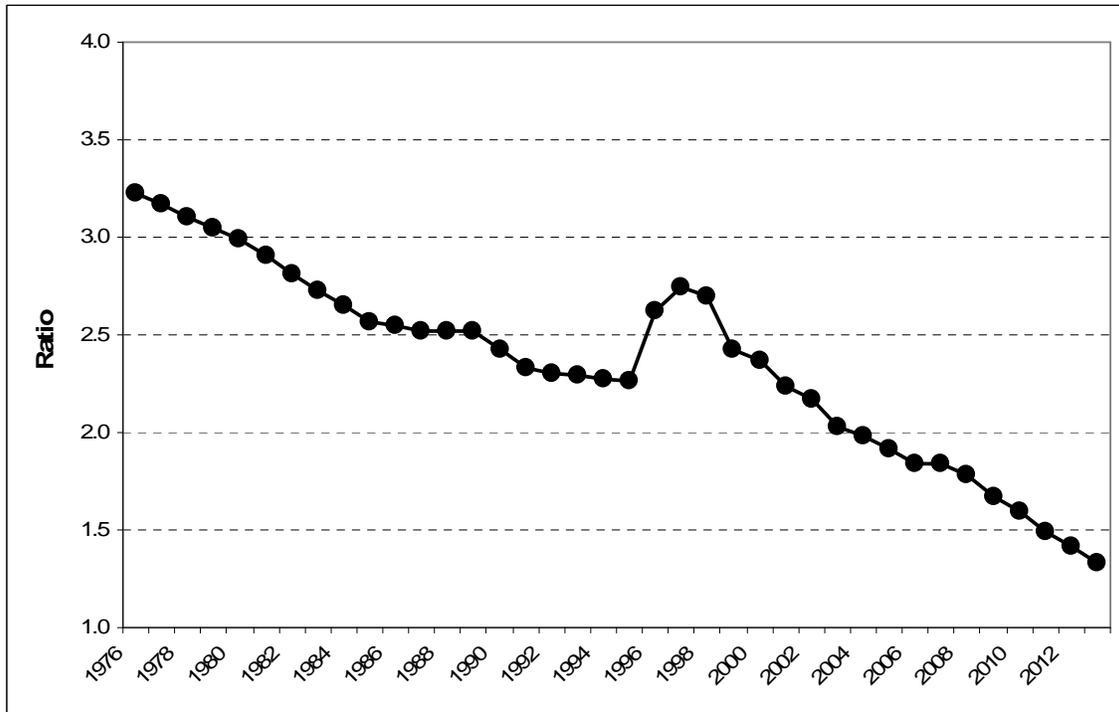
Pre-1996 Account

June 30	Number	Valuation Payroll (\$000s)	Average			Pay Increase %
			Age	Service	Pay	
1975	63,932	\$ 749,200	38.7	10.9	\$ 11,719	
1980	66,575	1,107,699	39.7	11.9	16,638	
1985	62,932	1,519,887	41.5	14.2	24,151	
1987	64,157	1,751,709	42.0	14.5	27,303	
1989	65,986	2,044,797	42.6	14.9	30,988	
1991	63,373	2,278,715	43.0	15.4	35,957	
1992	63,980	2,416,263	43.8	16.0	37,766	5.0%
1993	64,594	2,536,165	44.0	16.1	39,263	4.0
1994	65,209	2,614,915	44.1	16.2	40,101	2.1
1995	66,542	2,728,811	44.2	16.2	41,009	2.3
1996	70,183	2,805,823	44.2	15.7	39,979	(2.5)
1997	63,520	2,739,436	45.4	16.9	43,127	7.9
1998	59,030	2,699,183	46.4	18.0	45,726	6.0
1999	56,560	2,755,489	47.4	19.3	48,718	6.5
2000	52,920	2,561,533	48.2	20.1	48,404	(0.6)
2001	50,802	2,564,451	48.7	20.7	50,479	4.3
2002	47,510	2,604,956	49.4	21.5	54,830	8.6
2003	43,705	2,448,271	49.6	21.7	56,018	2.2
2004	41,510	2,384,480	50.1	22.2	57,444	2.5
2005	39,097	2,305,726	50.6	22.7	58,974	2.7
2006	36,994	2,237,380	51.1	23.2	60,480	2.6
2007	36,526	2,376,390	52.1	23.8	65,060	7.6
2008	34,628	2,295,816	52.5	24.6	66,299	1.9
2009	29,297	2,030,484	53.7	26.0	69,307	4.5
2010	26,439	1,865,102	53.9	26.3	70,544	1.8
2011	24,710	1,762,750	54.5	26.9	71,338	1.1
2012	22,688	1,637,066	54.9	27.4	72,156	1.1
2013	19,210	1,383,428	54.7	27.2	72,016	(0.2)

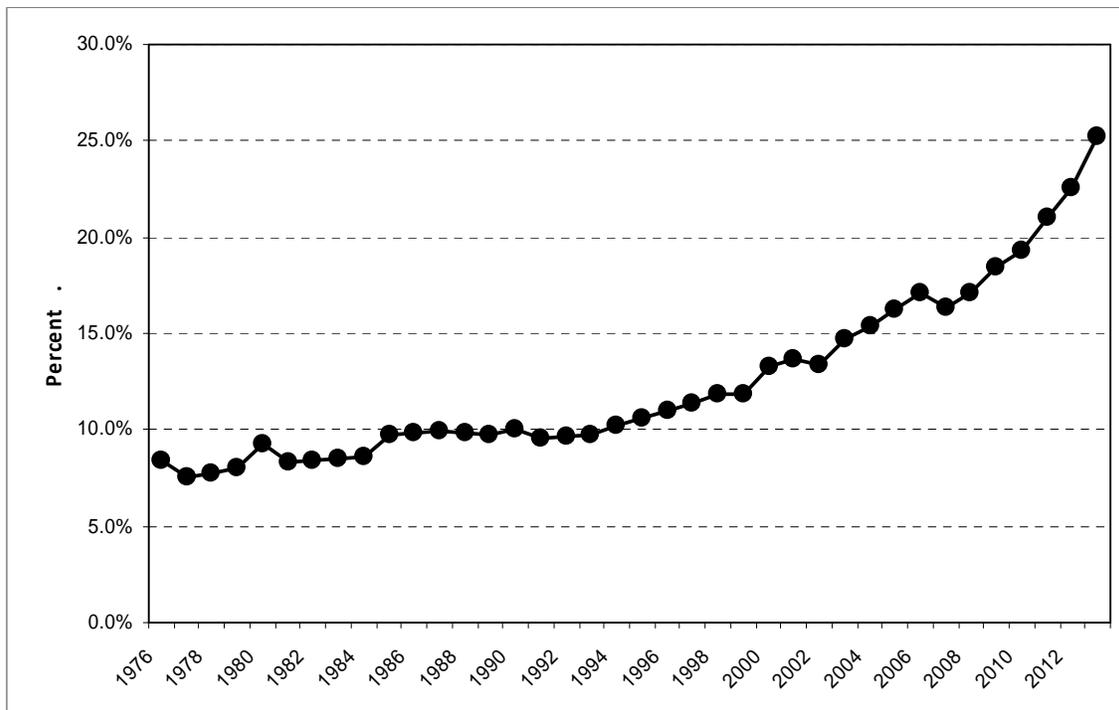
1996 Account

June 30	Number	Valuation Payroll (\$000s)	Average			Pay Increase %
			Age	Service	Pay	
1996	8,683	\$ 72,506	32.2	1.3	\$ 8,350	
1997	20,686	245,168	33.0	1.8	11,852	41.9%
1998	25,634	395,758	33.6	2.2	15,439	30.3
1999	21,185	538,837	35.3	4.0	25,435	64.7
2000	24,950	631,072	36.4	4.7	25,293	(0.6)
2001	24,846	754,426	36.3	5.5	30,364	20.0
2002	27,873	1,004,515	36.7	6.1	36,039	18.7
2003	29,936	1,136,864	37.0	6.5	37,976	5.4
2004	32,000	1,267,173	37.3	6.9	39,599	4.3
2005	34,826	1,428,604	37.5	7.2	41,021	3.6
2006	36,356	1,565,341	37.7	7.5	43,056	5.0
2007	39,307	1,891,605	38.2	7.8	48,124	11.8
2008	41,628	2,052,719	38.1	8.2	49,311	2.5
2009	45,046	2,308,548	38.3	8.4	51,249	3.9
2010	46,433	2,447,509	38.6	8.8	52,711	2.9
2011	46,633	2,507,193	39.2	9.4	53,764	2.0
2012	47,885	2,594,952	39.4	9.8	54,191	0.8
2013	51,204	2,740,940	39.3	9.8	53,530	(1.2)

Active Members per Retired Life



Total Retirement Allowances as a Percent of Valuation Payroll



Reconciliation of Market Value of Assets

	<u>6/30/2012 thru 6/30/2013</u>	<u>6/30/2011 thru 6/30/2012</u>
Market Value, beginning of year	\$ 9,077,059,225	\$ 9,121,736,893
Member Contributions	\$ 122,952,921	\$ 126,520,317
Employer Contributions	1,193,794,347	945,489,915
Benefit Payments	(1,310,102,791)	(1,278,173,734)
Net Transfers	<u>5,865,016</u>	<u>10,544,872</u>
Non-Investment Net Cash Flow	\$ 12,509,493	\$ (195,618,630)
Plan Expenses	\$ (60,235,980)	\$ (35,039,000)
Investment Return	<u>619,546,012</u>	<u>185,979,962</u>
Net Investment Return	\$ 559,310,032	\$ 150,940,962
Market Value, end of year	\$ 9,648,878,750	\$ 9,077,059,225
Market Value of Assets Approximate Annual Rate of Return ¹	6.2%	1.7%

¹ Net of expenses, assumes cash flows occur at mid-year.

Development of the Actuarial Value of Assets¹

	<u>6/30/2012 thru 6/30/2013</u>
1. Actuarial Value, beginning of year	\$ 6,041,146,708
2. Market Value, beginning of year	6,203,644,359
3. Market Value, end of year	6,844,124,317
4. Non-Investment Net Cash Flow	247,293,856
5. Net Investment Return	
a. Expected $[(.0675 \times ((2) + 0.5 \times (4))]$	427,092,162
b. Actual $[(3) - (2) - (4)]$	<u>393,186,102</u>
6. Current Year Market Value Gain/(Loss) $[(5b) - (5a)]$	\$ (33,906,060)
7. Deferred Recognition of Investment Gain/(Loss)	
a. Fiscal 2013 (75% of (6))	\$ (25,429,545)
b. Fiscal 2012 (50%)	(151,217,247)
c. Fiscal 2011 (25%)	<u>136,593,544</u>
d. Total $[(a) + (b) + (c)]$	\$ (40,053,248)
8. Preliminary Actuarial Value, end of year $[(3) - (7d)]$	6,884,177,565
a. 80% of Market Value, end of year $[80\% \text{ of } (3)]$	5,475,299,454
b. 120% of Market Value, end of year $[120\% \text{ of } (3)]$	8,212,949,180
9. Actuarial Value, end of year $[(8), \text{ but not Greater than } (8b), \text{ nor Less than } (8a)]$	\$ 6,884,177,565
10. Actuarial Value as a % of Market Value $[(9) / (3)]$	100.58522%
11. Net Investment Return on Actuarial Value $[(9) - (1) - (4)]$	\$ 595,737,001
12. Actuarial Value Net Rate of Return $[(11) / ((1) + 0.5 \times (4))]$	9.66%

¹ The Actuarial Value of Assets developed here is net of ASA account balances. For ASA account balances, the Actuarial Value of Assets is set equal to the Market Value of Assets.

Accrued Liability Reconciliation¹

	Pre-1996 Account	1996 Account	Total Fund
6/30/2012 Accrued Liability	\$ 14,547,938,557	\$ 3,438,970,114	\$ 17,986,908,671
Normal Cost	81,343,107	147,336,605	228,679,712
Actual Benefit Payments	(986,399,503)	(67,579,404)	(1,053,978,907)
Transfers	90,157,297	14,429,593	104,586,890
Expected Interest	<u>957,228,337</u>	<u>240,281,897</u>	<u>1,197,510,234</u>
Expected 6/30/2013 Accrued Liability	\$ 14,690,267,795	\$ 3,773,438,805	\$ 18,463,706,600
Sources of Change:			
Experience (Gain) or Loss	28,723,728	(10,318,608)	18,405,120
Additional Liability due to Cost-of-Living Adjustment ²	(69,442,713)	(5,676,028)	(75,118,741)
Actuarial Method Change ³	52,417,945	34,002,677	86,420,622
Plan Provision Change ⁴	<u>(52,417,945)</u>	<u>(34,002,677)</u>	<u>(86,420,622)</u>
Actual 6/30/2013 Accrued Liability	\$ 14,649,548,810	\$ 3,757,444,169	\$ 18,406,992,979

¹ Based on pension and ASA annuities only, i.e. net of ASA account balances.

² 13th check to retirees in lieu of the assumed 2014 1.0% COLA.

³ Recognition of cost of future ASA account conversions to annuities at 7.50% versus the valuation interest rate of 6.75%.

⁴ The liability associated with the expected annuitization of ASA balances was eliminated as of June 30, 2013 due to the Board's decision to modify ASA annuitizations starting October 1, 2014.

Asset and Liability Allocation¹

	Pre-1996 Account			1996 Account		
	Non-Retired	Retired	Total	Non-Retired	Retired	Total
Accrued Liability (AL)						
ASA Balance	\$ 1,636,978,290	\$ 175,851,637	\$ 1,812,829,927	\$ 975,308,603	\$ 16,615,903	\$ 991,924,506
ASA Annuities	0	1,082,701,767	1,082,701,767	0	78,374,599	78,374,599
Pension: Retirees	0	8,996,399,426	8,996,399,426	0	703,495,761	703,495,761
Pension: Non-Retirees	4,570,447,617	0	4,570,447,617	2,975,573,809	0	2,975,573,809
Total	\$ 6,207,425,907	\$10,254,952,830	\$ 16,462,378,737	\$ 3,950,882,412	\$ 798,486,263	\$ 4,749,368,675
Market Assets						
ASA Balance	\$ 1,636,978,290	\$ 175,851,637	\$ 1,812,829,927	\$ 975,308,603	\$ 16,615,903	\$ 991,924,506
ASA Annuities	0	1,082,701,767	1,082,701,767	0	78,374,599	78,374,599
Pension: Retirees	0	2,319,660,883	2,319,660,883	0	703,495,761	703,495,761
Pension: Non-Retirees	0	0	0	2,659,891,307	0	2,659,891,307
Total	\$ 1,636,978,290	\$3,578,214,287	\$ 5,215,192,577	\$ 3,635,199,910	\$ 798,486,263	\$ 4,433,686,173
Actuarial Assets						
ASA Balance	\$ 1,636,978,290	\$ 175,851,637	\$ 1,812,829,927	\$ 975,308,603	\$ 16,615,903	\$ 991,924,506
ASA Annuities	0	1,082,701,767	1,082,701,767	0	78,374,599	78,374,599
Pension: Retirees	0	2,339,572,220	2,339,572,220	0	703,495,761	703,495,761
Pension: Non-Retirees	0	0	0	2,680,033,218	0	2,680,033,218
Total	\$ 1,636,978,290	\$ 3,598,125,624	\$ 5,235,103,914	\$ 3,655,341,821	\$ 798,486,263	\$ 4,453,828,084
Unfunded AL						
ASA Balance	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
ASA Annuities	0	0	0	0	0	0
Pension: Retirees	0	6,656,827,206	6,656,827,206	0	0	0
Pension: Non-Retirees	4,570,447,617	0	4,570,447,617	295,540,591	0	295,540,591
Total	\$ 4,570,447,617	\$ 6,656,827,206	\$ 11,227,274,823	\$ 295,540,591	\$ 0	\$ 295,540,591

	Total Fund		
	Non-Retired	Retired	Total
Accrued Liability (AL)			
ASA Balance	\$ 2,612,286,893	\$ 192,467,540	\$ 2,804,754,433
ASA Annuities	0	1,161,076,366	1,161,076,366
Pension: Retirees	0	9,699,895,187	9,699,895,187
Pension: Non-Retirees	7,546,021,426	0	7,546,021,426
Total	\$10,158,308,319	\$11,053,439,093	\$ 21,211,747,412
Market Assets			
ASA Balance	\$ 2,612,286,893	\$ 192,467,540	\$ 2,804,754,433
ASA Annuities	0	1,161,076,366	1,161,076,366
Pension: Retirees	0	3,023,156,644	3,023,156,644
Pension: Non-Retirees	2,659,891,307	0	2,659,891,307
Total	\$ 5,272,178,200	\$4,376,700,550	\$ 9,648,878,750
Actuarial Assets			
ASA Balance	\$ 2,612,286,893	\$ 192,467,540	\$ 2,804,754,433
ASA Annuities	0	1,161,076,366	1,161,076,366
Pension: Retirees	0	3,043,067,981	3,043,067,981
Pension: Non-Retirees	2,680,033,218	0	2,680,033,218
Total	\$ 5,292,320,111	\$ 4,396,611,887	\$ 9,688,931,998
Unfunded AL			
ASA Balance	\$ 0	\$ 0	\$ 0
ASA Annuities	0	0	0
Pension: Retirees	0	6,656,827,206	6,656,827,206
Pension: Non-Retirees	4,865,988,208	0	4,865,988,208
Total	\$ 4,865,988,208	\$ 6,656,827,206	\$ 11,522,815,414

¹ Assets are allocated first to member ASA account liabilities, then to ASA annuity liabilities, then to Pension: Retirees liabilities, and finally to Pension: Non-Retirees liabilities to determine unfunded accrued liabilities.

Solvency Test

\$ Thousands

Year Ended June 30	Accrued Liability				Actuarial Value of Assets	Portion of Accrued Liability Covered by Assets			
	Active Member Contributions	Retirees and Beneficiaries	Active Member (Employer Financed Portion)	Total		Active Member Contribs.	Retirees and Bfcys	Active Member (Employer Financed Portion)	Total
Pre-1996 Account									
2005	\$2,925,367	\$5,653,502	\$5,675,278	\$14,254,147	\$5,796,724	100.0%	50.8%	0.0%	40.7%
2006	\$2,898,891	\$6,238,115	\$5,865,465	\$15,002,471	\$5,477,221	100.0%	41.3%	0.0%	36.5%
2007	\$3,016,052	\$7,063,889	\$5,908,318	\$15,988,259	\$5,763,508	100.0%	38.9%	0.0%	36.1%
2008	\$2,613,138	\$7,244,422	\$5,934,745	\$15,792,305	\$5,953,991	100.0%	46.1%	0.0%	37.7%
2009	\$2,389,886	\$7,891,346	\$5,745,861	\$16,027,093	\$5,109,086	100.0%	34.5%	0.0%	31.9%
2010	\$2,353,715	\$8,153,240	\$5,775,111	\$16,282,066	\$5,382,410	100.0%	37.1%	0.0%	33.1%
2011	\$2,015,580	\$8,776,916	\$5,525,908	\$16,318,404	\$5,227,402	100.0%	36.6%	0.0%	32.0%
2012	\$1,782,353	\$9,451,792	\$5,287,870	\$16,522,015	\$4,978,107	100.0%	33.8%	0.0%	30.1%
2013	\$1,636,978	\$10,254,953	\$4,570,448	\$16,462,379	\$5,235,104	100.0%	35.1%	0.0%	31.8%
1996 Account									
2005	\$535,179	\$219,722	\$1,255,845	\$2,010,746	\$1,268,575	100.0%	100.0%	40.9%	63.1%
2006	\$602,051	\$282,638	\$1,478,412	\$2,363,101	\$2,209,468	100.0%	100.0%	89.6%	93.5%
2007	\$656,918	\$449,452	\$1,721,184	\$2,827,554	\$2,713,051	100.0%	100.0%	93.3%	95.9%
2008	\$649,840	\$514,933	\$1,792,985	\$2,957,758	\$3,080,057	100.0%	100.0%	100.0%	104.1%
2009	\$655,843	\$432,942	\$2,046,748	\$3,135,533	\$2,920,735	100.0%	100.0%	89.5%	93.1%
2010	\$750,575	\$483,117	\$2,380,867	\$3,614,559	\$3,422,554	100.0%	100.0%	91.9%	94.7%
2011	\$840,341	\$562,445	\$2,594,053	\$3,996,839	\$3,664,657	100.0%	100.0%	87.2%	91.7%
2012	\$882,942	\$662,558	\$2,792,809	\$4,338,309	\$3,936,455	100.0%	100.0%	85.6%	90.7%
2013	\$975,309	\$798,486	\$2,975,573	\$4,749,368	\$4,453,828	100.0%	100.0%	90.1%	93.8%
Total Fund									
2005	\$3,460,546	\$5,873,224	\$6,931,123	\$16,264,893	\$7,065,299	100.0%	61.4%	0.0%	43.4%
2006	\$3,500,942	\$6,520,753	\$7,343,877	\$17,365,572	\$7,686,689	100.0%	64.2%	0.0%	44.3%
2007	\$3,672,970	\$7,513,341	\$7,629,502	\$18,815,813	\$8,476,559	100.0%	63.9%	0.0%	45.1%
2008	\$3,262,978	\$7,759,355	\$7,727,730	\$18,750,063	\$9,034,048	100.0%	74.4%	0.0%	48.2%
2009	\$3,045,729	\$8,324,288	\$7,792,609	\$19,162,626	\$8,029,821	100.0%	59.9%	0.0%	41.9%
2010	\$3,104,290	\$8,636,357	\$8,155,978	\$19,896,625	\$8,804,964	100.0%	66.0%	0.0%	44.3%
2011	\$2,855,921	\$9,339,361	\$8,119,961	\$20,315,243	\$8,892,059	100.0%	64.6%	0.0%	43.8%
2012	\$2,665,295	\$10,114,350	\$8,080,679	\$20,860,324	\$8,914,562	100.0%	61.8%	0.0%	42.7%
2013	\$2,612,287	\$11,053,439	\$7,546,021	\$21,211,747	\$9,688,932	100.0%	64.0%	0.0%	45.7%

Analysis of Financial Experience¹

\$Thousands	Pre-1996 Account	1996 Account	Total Fund
6/30/2012 Unfunded Accrued Liability	\$ 11,543,908	\$ 401,854	\$ 11,945,762
(Gain) / Loss:			
Actuarial Value of Assets	\$ (94,113)	\$ (85,500)	\$ (179,613)
Actuarial Accrued Liabilities	28,724	(10,319)	18,405
Amortization of Existing Bases	(181,801)	(4,819)	(186,620)
Additional Liability due to Cost-of-Living Adjustment ²	(69,443)	(5,676)	(75,119)
Actuarial Method Change ³	52,418	34,003	86,421
Plan Provision Change ⁴	<u>(52,418)</u>	<u>(34,003)</u>	<u>(86,421)</u>
Net Change	\$ (316,633)	\$ (106,314)	\$ (422,947)
6/30/2013 Unfunded Accrued Liability	\$ 11,227,275	\$ 295,540	\$ 11,522,815

¹ Based on pension and ASA annuities only, i.e. net of ASA account balances.

² 13th check to retirees in lieu of the assumed 2014 1.0% COLA.

³ Recognition of cost of future ASA account conversions to annuities at 7.50% versus the valuation interest rate of 6.75%.

⁴ The liability associated with the expected annuitization of ASA balances was eliminated as of June 30, 2013 due to the Board's decision to modify ASA annuitizations starting October 1, 2014.

Sensitivity to Changes in Assumed Investment Return / Interest Rate

Pre-1996 Account

\$Millions	Assumed Investment Return / Interest Rate				
	6.00%	6.50%	6.75%	7.50%	8.00%
Funded Status					
Actuarial Accrued Liability	\$ 17,560.9	\$ 16,819.8	\$ 16,462.4	\$ 15,500.2	\$ 14,894.2
Actuarial Value of Assets	<u>5,235.1</u>	<u>5,235.1</u>	<u>5,235.1</u>	<u>5,235.1</u>	<u>5,235.1</u>
Unfunded Accrued Liability	\$ 12,325.8	\$ 11,584.7	\$ 11,227.3	\$ 10,265.1	\$ 9,659.1
Funded Ratio	29.8%	31.1%	31.8%	33.8%	35.1%
Annual Required Contribution Rate					
Normal Cost %	6.16%	5.34%	4.98%	4.02%	3.49%
UAL Amortization %	<u>64.18%</u>	<u>63.19%</u>	<u>62.64%</u>	<u>60.80%</u>	<u>59.41%</u>
Annual Required Contribution %	70.34%	68.53%	67.62%	64.82%	62.90%

1996 Account

\$Millions	Assumed Investment Return / Interest Rate				
	6.00%	6.50%	6.75%	7.50%	8.00%
Funded Status					
Actuarial Accrued Liability	\$ 5,248.1	\$ 4,908.7	\$ 4,749.3	\$ 4,329.5	\$ 4,076.0
Actuarial Value of Assets	<u>4,453.8</u>	<u>4,453.8</u>	<u>4,453.8</u>	<u>4,453.8</u>	<u>4,453.8</u>
Unfunded Accrued Liability	\$ 794.3	\$ 454.9	\$ 295.5	\$ (124.3)	\$ (377.8)
Funded Ratio	84.9%	90.7%	93.8%	102.9%	109.3%
Annual Required Contribution Rate					
Normal Cost %	6.95%	6.06%	5.67%	4.62%	4.04%
UAL Amortization %	<u>2.01%</u>	<u>1.23%</u>	<u>0.83%</u>	<u>-0.37%</u>	<u>-1.18%</u>
Annual Required Contribution %	8.96%	7.29%	6.50%	4.25%	2.86%

Calculated Employer Contribution Rate

1996 Account

	6/30/2013	% of Projected Payroll for Fiscal 2014
Normal Cost	\$ 155,314,388	5.67%
Amortization of Unfunded Accrued Liability		
Unfunded Accrued Liability (UAL)*	\$ 295,540,591	
Unamortized UAL from Prior Years	<u>396,725,289</u>	
Net Unamortized UAL	\$ (101,184,698)	
Amortization Factor (30-years, level dollar)	13.5862	
Current Year Amortization Payment	\$ (7,447,608)	
Payments Established in Prior Years	<u>30,214,367</u>	
Total Amortization Payments	\$ 22,766,759	0.83%
Calculated Employer Contribution Rate	\$ 178,081,147	6.50%
Projected Fiscal 2015 Payroll	\$ 2,987,600,000	
Projected Fiscal 2015 Contribution	\$ 194,194,000	

Pre-1996 Account

	Fiscal 2014	Fiscal 2015
Expected Pension Benefit Payments	\$ 925,500,000	\$ 934,300,000
Expected Pension Contributions	\$ 828,700,000	\$ 832,800,000

The Pre-1996 Account is funded on a pay-as-you-go basis. The figures shown above reflect the expected defined benefit pension payments (excluding ASA annuities) and contributions to be made during fiscal year 2014 and fiscal year 2015.

The calculation of the Annual Required Contribution (ARC) included in the GASB section is shown below.

Fiscal 2015 Annual Required Contribution (ARC)

Normal Cost	\$ 68,860,011
Amortization of Unfunded Accrued Liability	
Unfunded Accrued Liability (UAL)*	\$ 11,227,274,823
Unamortized UAL from Prior Years	<u>11,236,363,805</u>
Net Unamortized UAL	\$ (9,088,982)
Amortization Factor (30-years, level dollar)	13.5862
Current Year Amortization Payment	\$ (668,986)
Payments Established in Prior Years	<u>867,231,461</u>
Total Amortization Payments	\$ 866,562,475
6/30/2013 Annual Required Contribution (ARC)	\$ 935,422,486
ARC as Percent of Payroll	67.62%
Projected Fiscal 2015 Payroll	\$ 1,275,500,000
Projected Fiscal 2015 ARC	\$ 862,493,100

* Pension and ASA annuity only

GASB Statements No. 25 and No. 27

Required Supplementary Information

Under the Governmental Accounting Standards Board (GASB) Statements No. 25 and No. 27, certain information about the plan is required to be disclosed. The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation Date	June 30, 2013
Actuarial Cost Method	Entry Age Normal (Level Percent of Pay)
Amortization Method	Level Dollar
Amortization Period	30 Years, Closed
Asset Valuation Method	4-Year Smoothed Market Value with 20% Corridor
Actuarial Assumptions:	
Investment Rate of Return	6.75%
Projected Pay Increases	3.00 – 12.50% (includes 3.00% wage inflation)
Cost-of-Living Adjustments	1.0% Compounded Annually on Pension Portion

Membership in the plan consisted of the following at June 30, 2013, the date of the latest actuarial valuation:

	<u>2013</u>
Retired Members and Beneficiaries Receiving Benefits	53,010
Inactive Members Entitled to but Not Yet Receiving Benefits	
Vested	6,417
Nonvested	11,693
Active Members	<u>70,414</u>
Total	141,534

GASB Statements No. 25 and No. 27

Required Supplementary Information

Schedule of Funding Progress

Valuation Date June 30	Actuarial Value of Assets (a)	Entry Age Accrued Liability (b)	Unfunded Accrued Liability (UAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAL as a % of Covered Payroll [(b) - (a)] / (c)
1996	\$ 3,262,619,379	\$ 10,330,788,316	\$ 7,068,168,937	31.6%	\$ 2,878,329,486	245.6%
1997	3,750,138,439	11,044,660,156	7,294,521,717	34.0	2,984,603,913	244.4
1998	4,266,312,063	11,780,174,095	7,513,862,032	36.2	3,094,940,606	242.8
1999	4,970,720,334	12,670,924,443	7,700,204,109	39.2	3,294,326,130	233.7
2000	5,578,046,785	13,115,065,443	7,537,018,658	42.5	3,192,604,492	236.1
2001	5,810,759,564	13,523,825,973	7,713,066,409	43.0	3,318,877,027	232.4
2002	6,176,574,529	14,664,661,236	8,488,086,707	42.1	3,609,470,436	235.2
2003	6,554,364,927	14,747,339,056	8,192,974,129	44.4	3,585,134,913	228.5
2004	6,804,394,627	15,197,925,988	8,393,531,361	44.8	3,651,653,125	229.9
2005	7,065,299,476	16,264,893,444	9,199,593,968	43.4	3,734,329,113	246.4
2006	7,686,688,965	17,365,572,132	9,678,883,167	44.3	3,802,721,221	254.5
2007	8,476,559,086	18,815,812,935	10,339,253,849	45.1	4,267,995,166	242.3
2008	9,034,047,394	18,750,062,742	9,716,015,348	48.2	4,348,535,867	223.4
2009	8,029,820,891	19,162,625,560	11,132,804,669	41.9	4,339,032,221	256.6
2010	8,804,963,622	19,896,625,065	11,091,661,443	44.3	4,312,610,704	257.2
2011	8,892,059,345	20,315,242,855	11,423,183,510	43.8	4,269,943,587	267.5
2012	8,914,561,574	20,860,323,537	11,945,761,963	42.7	4,232,018,389	282.3
2013	9,688,931,998	21,211,747,412	11,522,815,414	45.7	4,124,367,980	279.4

Schedule of Employer Contributions

Fiscal Year Ending	Valuation Date June 30	Annual Required Contribution	Actual Employer Contribution	Percentage Contributed
1998	1996	\$ 508,940,065	\$ 465,350,488	91.4%
1999	1997	508,259,679	612,349,218	120.5
2000	1998	524,815,537	647,441,260	123.4
2001	1999	547,532,673	689,219,756	125.9
2002	2000	537,789,669	566,226,658	105.3
2003	2001	572,226,197	602,231,775	105.2
2004	2002	638,541,074	438,180,343	68.6
2005	2003	619,186,005	484,778,888	78.3
2006	2004	672,555,533	701,340,085	104.3
2007	2005	742,882,002	753,039,657	101.4
2008	2006	800,059,308	808,128,686	101.0
2009	2007	819,638,258	853,790,969	104.2
2010	2008	952,120,349	885,639,968	93.0
2011	2009	1,048,649,181	915,611,470	87.3
2012	2010	1,039,857,902	945,489,915	90.9
2013	2011	1,041,062,060	1,193,794,347	114.7
2014	2012	1,074,313,200		
2015	2013	1,056,687,100		

GASB Statements No. 25 and No. 27

Development of the Net Pension Obligation (NPO)

Pre-1996 Account

\$000's	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Fiscal Year	ARC	Interest on NPO	ARC Adjustment (8) / (4)	Amortization Factor	Net Cost (1) + (2) - (3)	Actual Employer Contribution	Change in NPO (5) - (6)	NPO at BOY	NPO at EOY (7) + (8)
1988	\$ 214,776	\$ 0	\$ 0	12.5944	\$ 214,776	\$ 149,987	\$ 64,789	\$ 0	\$ 64,789
1989	236,695	4,859	5,144	12.5944	236,410	162,431	73,979	64,789	138,768
1990	236,695	10,408	11,018	12.5944	236,084	201,260	34,824	138,768	173,592
1991	319,429	13,019	13,783	12.5944	318,665	241,400	77,265	173,592	250,857
1992	357,575	18,814	19,918	12.5944	356,471	206,626	149,845	250,857	400,703
1993	394,291	30,053	31,816	12.5944	392,528	204,081	188,447	400,703	589,149
1994	416,022	44,186	46,779	12.5944	413,430	230,795	182,635	589,149	771,784
1995	436,399	57,884	61,280	12.5944	433,003	239,177	193,826	771,784	965,610
1996	456,847	72,421	76,670	12.5944	452,598	307,337	145,261	965,610	1,110,871
1997	481,927	83,315	88,204	12.5944	477,039	519,844	(42,805)	1,110,871	1,068,065
1998	502,040	80,105	84,805	12.5944	497,340	436,138	61,202	1,068,065	1,129,268
1999	484,671	84,695	89,664	12.5944	479,702	571,157	(91,455)	1,129,268	1,037,812
2000	486,946	77,836	82,403	12.5944	482,379	593,045	(110,666)	1,037,812	927,147
2001	494,779	69,536	73,616	12.5944	490,699	623,982	(133,283)	927,147	793,864
2002	474,274	59,540	63,312	12.5390	470,502	482,681	(12,179)	793,864	781,685
2003	496,034	58,626	62,638	12.4794	492,022	508,148	(16,126)	781,685	765,559
2004	532,326	57,417	61,662	12.4154	528,081	357,799	170,282	765,559	935,841
2005	516,267	70,188	75,798	12.3465	510,657	394,387	116,270	935,841	1,052,111
2006	556,460	78,908	89,083	11.8104	546,285	601,259	(54,974)	1,052,111	997,137
2007	602,904	74,785	85,253	11.6962	592,436	636,039	(43,603)	997,137	953,534
2008	678,050	71,515	82,390	11.5734	667,175	675,682	(8,507)	953,534	945,027
2009	700,307	70,877	80,017	11.8104	691,168	706,366	(15,198)	945,027	929,829
2010	850,493	69,737	78,730	11.8104	841,500	727,766	113,734	929,829	1,043,563
2011	894,507	73,049	84,097	12.4090	883,459	748,978	134,481	1,043,563	1,178,044
2012	866,207	82,463	94,935	12.4090	853,735	764,423	89,312	1,178,044	1,267,356
2013	873,751	85,547	99,579	12.7272	859,719	1,013,080	(153,361)	1,267,356	1,113,995

1996 Account

\$000's	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Fiscal Year	ARC	Interest on NPO	ARC Adjustment (8) / (4)	Amortization Factor	Net Cost (1) + (2) - (3)	Actual Employer Contribution	Change in NPO (5) - (6)	NPO at BOY	NPO at EOY (7) + (8)
1998	\$ 6,900	\$ 0	\$ 0	12.5944	\$ 6,900	\$ 29,212	\$ (22,312)	\$ 0	\$ (22,312)
1999	23,589	(1,673)	(1,772)	12.5944	23,688	41,192	(17,504)	(22,312)	(39,816)
2000	37,870	(2,986)	(3,161)	12.5944	38,045	54,396	(16,351)	(39,816)	(56,167)
2001	52,754	(4,213)	(4,460)	12.5944	53,001	65,238	(12,237)	(56,167)	(68,404)
2002	63,516	(5,130)	(5,455)	12.5390	63,841	83,546	(19,705)	(68,404)	(88,109)
2003	76,192	(6,608)	(7,060)	12.4794	76,644	94,083	(17,439)	(88,109)	(105,548)
2004	106,215	(7,916)	(8,501)	12.4154	106,800	80,381	26,419	(105,548)	(79,129)
2005	102,919	(5,935)	(6,409)	12.3465	103,393	90,392	13,001	(79,129)	(66,128)
2006	116,096	(4,960)	(5,599)	11.8104	116,735	100,081	16,654	(66,128)	(49,474)
2007	139,978	(3,711)	(4,230)	11.6962	140,497	117,001	23,496	(49,474)	(25,978)
2008	122,009	(1,948)	(2,245)	11.5734	122,306	132,447	(10,141)	(25,978)	(36,119)
2009	119,331	(2,709)	(3,058)	11.8104	119,680	147,425	(27,745)	(36,119)	(63,864)
2010	101,627	(4,790)	(5,407)	11.8104	102,244	157,874	(55,630)	(63,864)	(119,494)
2011	154,142	(8,365)	(9,630)	12.4090	155,407	166,633	(11,226)	(119,494)	(130,720)
2012	173,651	(9,150)	(10,534)	12.4090	175,035	181,067	(6,032)	(130,720)	(136,752)
2013	167,311	(9,231)	(10,745)	12.7272	168,825	180,715	(11,890)	(136,752)	(148,642)

ARC = Annual Required Contribution
 BOY = Beginning of Year
 EOY = End of Year

Additional Information:

Annual actuarial valuation reports not issued for FY1988 & FY1990 – valuations conducted bi-annually prior to FY1991.
 Assumed 40-year amortization period for FY1988 – FY1997 since annual actuarial valuation reports were not retained prior to FY1998.

GASB Statements No. 25 and No. 27

Statement of Net Position

Assets

Cash	\$	2,702,785
Receivables:		
Contributions Receivable	\$	6,850,448
Miscellaneous Receivables		346,225
Investments Receivable		809,583,580
Interest and Dividends		33,241,546
Due From Other Funds		<u>1,102,167</u>
Total Receivables	\$	851,123,966
Investments:		
Short Term Investments	\$	0
Pooled Unit Trust Assets		
Repurchase Agreements		9,281,351
Short Term Investments		488,496,642
Fixed Income		4,338,409,487
Equities		2,534,630,906
Other Investments		2,527,811,293
Securities Lending Collateral		<u>347,370,575</u>
Total Investments	\$	10,246,000,254
Other Assets	\$	0
Gross Capitalized Assets	\$	4,552,788
Less: Accumulated Depreciation and Amortization		<u>(1,732,185)</u>
Net Capitalized Assets	\$	2,820,603
Total Assets	\$	11,102,647,608

Liabilities

Accounts Payable	\$	896,306
Retirement Benefits Payable		86,898,783
Salaries and Benefits Payable		0
Investments Payable		957,993,985
Securities Lending Obligations		347,370,575
Securities Sold Under Agreement to Repurchase		55,625,613
Due to Other Funds		<u>4,983,596</u>
Total Liabilities	\$	1,453,768,858

Net Position Restricted for Pension Benefits **\$ 9,648,878,750**

GASB Statements No. 25 and No. 27

Statement of Changes in Net Position

Additions

Contributions:

Member Contributions	\$ 122,952,921
Employer Contributions	1,163,794,347
Other Contributions	<u>30,000,000</u>
Total Contributions	\$ 1,316,747,268

Investment Income:

Net Appreciation / (Depreciation) Fair Value of Investments	\$ 418,972,430
Other Net Investment Income	47,869,530
Net Interest and Dividends Income	150,796,933
Securities Lending Income	<u>1,897,578</u>
Total Investment Income	\$ 619,536,471

Less Direct Investment Expenses:

Investment Management Fees	\$ (42,118,233)
Securities Lending Fees	(284,411)
Direct Investment Expenses	<u>(3,425,058)</u>
Total Direct Investment Expenses	\$ (45,827,702)

Net Investment Income / (Loss) \$ 573,708,769

Other Additions:

Miscellaneous Income	\$ 9,542
Interfund Transfers	<u>10,204,445</u>
Total Other Additions	\$ 10,213,987

Total Additions \$ 1,900,670,024

Deductions

Pension and Disability Benefits	\$ 1,287,438,963
Special Death Benefits	0
Distributions of Contributions and Interest	22,663,829
Pension Relief Distributions	0
Local Unit Withdrawals	0
Administrative Expenses	10,127,180
Project Expenses	4,281,098
Interfund Transfers	<u>4,339,429</u>
Total Deductions	\$ 1,328,850,499

Net Increase / (Decrease) \$ 571,819,525

Beginning Net Position Restricted for Pension Benefits \$ 9,077,059,225

Ending Net Position Restricted for Pension Benefits \$ 9,648,878,750

Member Data

The tables below summarize the member data used in the valuation. The pages that follow show various distributions of the member groups.

Pre-1996 Account

	Males	Females	Total
Number of Actives	4,963	14,247	19,210
- Average Age	54.9	54.6	54.7
- Average Service	28.6	26.8	27.2
- Average Pay	\$ 77,352	\$ 70,157	\$ 72,016
Number of Inactive Vesteds	757	2,557	3,314
- Average Age	57.0	57.1	57.1
- Average Service	22.6	20.5	21.0
Number of Inactive Nonvesteds	109	437	546
Number of Retirees and Beneficiaries	16,597	32,748	49,345
- Average Age	72.3	72.3	72.3
- Average Years Retired	12.8	12.6	12.6
- Average Monthly Annuity	\$ 222	\$ 176	\$ 191
- Average Monthly Pension	\$ 1,610	\$ 1,373	\$ 1,453
Total Number of Members	22,426	49,989	72,415

1996 Account

	Males	Females	Total
Number of Actives	13,572	37,632	51,204
- Average Age	39.3	39.3	39.3
- Average Service	10.3	9.6	9.8
- Average Pay	\$ 58,803	\$ 51,628	\$ 53,530
Number of Inactive Vesteds	795	2,308	3,103
- Average Age	49.4	51.2	50.8
- Average Service	15.8	14.8	15.1
Number of Inactive Nonvesteds	2,530	8,617	11,147
Number of Retirees and Beneficiaries	1,298	2,367	3,665
- Average Age	66.6	66.2	66.3
- Average Years Retired	6.7	5.8	6.1
- Average Monthly Annuity	\$ 200	\$ 141	\$ 162
- Average Monthly Pension	\$ 1,678	\$ 1,194	\$ 1,366
Total Number of Members	18,195	50,924	69,119

Total Fund

	Males	Females	Total
Number of Actives	18,535	51,879	70,414
- Average Age	43.5	43.5	43.5
- Average Service	15.2	14.3	14.5
- Average Pay	\$ 63,769	\$ 56,717	\$ 58,573
Number of Inactive Vesteds	1,552	4,865	6,417
- Average Age	53.1	54.3	54.0
- Average Service	19.1	17.8	18.1
Number of Inactive Nonvesteds	2,639	9,054	11,693
Number of Retirees and Beneficiaries	17,895	35,115	53,010
- Average Age	71.9	71.9	71.9
- Average Years Retired	12.3	12.1	12.2
- Average Monthly Annuity	\$ 220	\$ 174	\$ 189
- Average Monthly Pension	\$ 1,615	\$ 1,361	\$ 1,447
Total Number of Members	40,621	100,913	141,534

Active Members: Pre-1996 Account

By Attained Age and Years of Service

Attained Age	Years of Service to Valuation Date							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
15-19	-	-	-	-	-	-	-	-
20-24	-	-	-	-	-	-	-	-
25-29	2	-	-	-	-	-	-	2
30-34	-	-	-	-	-	-	-	-
35-39	4	4	-	11	1	-	-	20
40-44	78	80	79	829	579	3	-	1,648
45-49	52	77	100	403	1,694	682	1	3,009
50-54	24	38	65	258	827	2,312	676	4,200
55-59	22	35	36	253	775	1,139	2,874	5,134
60-64	24	23	24	168	523	685	2,787	4,234
65-69	14	15	16	34	93	108	584	864
70-74	1	3	2	4	7	8	58	83
75-79	3	5	1	2	-	-	3	14
80 & Over	-	-	-	-	-	-	2	2
Total	224	280	323	1,962	4,499	4,937	6,985	19,210

Average Age: 54.7
Average Service: 27.2

Active Members: 1996 Account

By Attained Age and Years of Service

Attained Age	Years of Service to Valuation Date							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
15-19	-	-	-	-	-	-	-	-
20-24	1,341	-	-	-	-	-	-	1,341
25-29	6,041	2,020	-	-	-	-	-	8,061
30-34	2,168	6,393	1,693	-	-	-	-	10,254
35-39	1,149	2,307	4,905	1,194	1	-	-	9,556
40-44	953	1,426	1,943	3,132	307	2	-	7,763
45-49	617	1,010	1,191	1,216	737	147	1	4,919
50-54	435	723	990	911	390	403	107	3,959
55-59	267	417	706	816	332	220	294	3,052
60-64	167	206	391	473	244	133	211	1,825
65-69	47	68	82	81	48	29	35	390
70-74	22	11	13	8	2	-	-	56
75-79	11	4	3	1	-	-	-	19
80 & Over	4	2	3	-	-	-	-	9
Total	13,222	14,587	11,920	7,832	2,061	934	648	51,204

Average Age: 39.3
Average Service: 9.8

Inactive Vested Members: Pre-1996 Account

By Attained Age and Years of Service

Attained Age	Years of Service at Termination							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
35-39	-	-	1	-	-	-	-	1
40-44	-	-	75	63	10	-	1	149
45-49	-	-	171	96	78	12	-	357
50-54	-	-	184	141	98	100	22	545
55-59	-	-	242	203	150	129	185	909
60-64	-	-	330	121	123	90	319	983
65-69	-	-	105	37	31	32	121	326
70-74	-	-	11	7	4	1	7	30
75-79	-	-	3	-	-	-	1	4
80 & Over	-	-	4	4	1	1	-	10
Total	-	-	1,126	672	495	365	656	3,314

Average Age: 57.1
Average Service: 21.0

Inactive Vested Members: 1996 Account

By Attained Age and Years of Service

Attained Age	Years of Service at Termination							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
20-24	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-
30-34	-	-	33	-	-	-	-	33
35-39	-	-	337	34	1	-	-	372
40-44	-	-	373	165	10	-	-	548
45-49	-	-	233	122	57	4	1	417
50-54	-	-	267	129	68	26	8	498
55-59	-	-	284	182	83	39	25	613
60-64	-	-	254	114	52	26	30	476
65-69	-	-	76	29	15	3	11	134
70-74	-	-	5	3	1	1	2	12
75-79	-	-	-	-	-	-	-	-
80 & Over	-	-	-	-	-	-	-	-
Total	-	-	1,862	778	287	99	77	3,103

Average Age: 50.8
Average Service: 15.1

Retired Members: Pre-1996 Account

By Attained Age and Completed Years of Retirement

Attained Age	Years of Retirement							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
Under 40	12	32	22	10	2	5	1	84
40-44	5	16	13	10	2	-	-	46
45-49	4	12	13	9	7	2	-	47
50-54	71	19	20	19	11	2	3	145
55-59	1,358	129	47	38	20	6	5	1,603
60-64	5,026	2,888	225	70	42	37	11	8,299
65-69	3,719	5,052	3,044	266	90	41	14	12,226
70-74	623	2,378	3,661	2,124	276	57	26	9,145
75-79	38	389	1,680	2,950	1,135	269	63	6,524
80-84	12	25	289	1,614	2,267	703	264	5,174
85-89	2	10	56	220	1,270	1,495	554	3,607
90-94	4	4	5	27	146	694	791	1,671
95-99	1	2	1	4	6	67	580	661
100 & Over	-	1	-	-	-	2	110	113
Total	10,875	10,957	9,076	7,361	5,274	3,380	2,422	49,345

Average Age: 72.3
Average Years Retired: 12.6

Retired Members: 1996 Account

By Attained Age and Completed Years of Retirement

Attained Age	Years of Retirement							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
Under 40	5	6	3	-	-	-	-	14
40-44	2	3	2	-	-	-	-	7
45-49	7	3	3	-	-	-	-	13
50-54	34	9	7	-	-	-	-	50
55-59	222	35	5	-	1	-	-	263
60-64	769	261	32	2	1	-	-	1,065
65-69	618	404	231	15	-	-	-	1,268
70-74	100	245	236	65	2	-	-	648
75-79	16	44	77	66	16	5	-	224
80-84	6	4	15	29	23	2	1	80
85-89	-	2	6	2	14	4	-	28
90 & Over	-	-	-	-	1	3	1	5
Total	1,779	1,016	617	179	58	14	2	3,665

Average Age: 66.3
Average Years Retired: 6.1

Retired Members: Pre-1996 Account

By Year of Retirement

Year of Retirement As of June 30	Number	Monthly Pension	
		Total	Average
Before 1978	611	\$ 269,230	\$ 441
1978	169	88,235	522
1979	212	117,330	553
1980	263	162,268	617
1981	275	158,872	578
1982	276	163,988	594
1983	369	230,055	623
1984	444	287,492	648
1985	648	462,045	713
1986	568	413,573	728
1987	687	539,928	786
1988	812	684,094	842
1989	674	599,425	889
1990	1,045	1,066,523	1,021
1991	1,048	1,151,500	1,099
1992	973	1,098,223	1,129
1993	1,030	1,244,163	1,208
1994	1,161	1,432,393	1,234
1995	1,516	1,945,311	1,283
1996	1,512	1,974,152	1,306
1997	1,307	1,701,700	1,302
1998	1,665	2,153,311	1,293
1999	1,542	2,114,927	1,372
2000	1,798	2,551,048	1,419
2001	1,772	2,586,067	1,459
2002	2,085	3,032,408	1,454
2003	1,844	2,745,761	1,489
2004	2,156	3,248,627	1,507
2005	2,060	3,255,787	1,580
2006	2,237	3,595,322	1,607
2007	2,135	3,464,131	1,623
2008	2,548	4,334,973	1,701
2009	1,870	3,335,787	1,784
2010	2,086	3,866,425	1,854
2011	2,828	5,371,180	1,899
2012	3,093	6,042,826	1,954
2013	2,026	4,200,804	2,073
Total	49,345	\$ 71,689,881	\$ 1,453

Retired Members: 1996 Account

By Year of Retirement

Year of Retirement As of June 30	Number	Monthly Pension	
		Total	Average
1981	1	\$259	\$259
1982	1	936	936
1986	2	1,562	781
1987	5	3,335	667
1988	4	2,621	655
1989	5	3,767	753
1990	11	10,280	935
1991	12	10,707	892
1992	11	12,590	1,145
1993	8	7,935	992
1994	17	21,906	1,289
1995	27	30,812	1,141
1996	33	41,793	1,266
1997	31	37,859	1,221
1998	45	53,433	1,187
1999	51	66,913	1,312
2000	80	101,039	1,263
2001	107	139,273	1,302
2002	140	199,499	1,425
2003	167	229,729	1,376
2004	192	261,534	1,362
2005	170	245,825	1,446
2006	170	229,780	1,352
2007	197	250,322	1,271
2008	255	362,125	1,420
2009	235	332,786	1,416
2010	285	400,631	1,406
2011	408	598,904	1,468
2012	505	682,692	1,352
2013	490	663,936	1,355
Total	3,665	\$ 5,004,783	\$ 1,366

Retired Members

Reconciliation of Benefit Recipients, July 1, 2012 to July 1, 2013

Pre-1996 Account

	Number of Members	Sum of Annual Allowances*
Beginning of Year Rolls	47,000	\$ 898,005,660
Added to Rolls	3,422	93,604,576
Removed from Rolls	(1,077)	(14,523,735)
Benefit Changes		(3,451,033)
End of Year Rolls	49,345	\$ 973,635,468
Percentage Increase in Annual Allowances		8.42%
Average Annual Allowances		\$ 19,731

1996 Account

	Number of Members	Sum of Annual Allowances*
Beginning of Year Rolls	2,971	\$ 55,474,668
Added to Rolls	712	12,216,094
Removed from Rolls	(18)	(250,893)
Benefit Changes		(270,493)
End of Year Rolls	3,665	\$ 67,169,376
Percentage Increase in Annual Allowances		21.08%
Average Annual Allowances		\$ 18,327

* Pension and ASA annuity

Retired Members

Number of Benefit Recipients by Benefit Option

Pre-1996 Account

Amount of Monthly Benefit ¹	Option A-1	Option A-2	Option A-3	Option B-1	Option B-2	Option B-3	Survivors	Disability	Total
\$1-\$500	1,725	839	214	1,089	236	419	473	77	5,072
\$501-\$1,000	2,085	1,423	311	1,911	685	930	340	179	7,864
\$1,001-\$1,500	3,111	2,437	433	3,877	1,180	1,319	150	223	12,730
\$1,501-\$2,000	2,987	2,816	356	4,184	1,395	1,623	131	110	13,602
\$2,001-\$3,000	2,047	2,384	273	2,338	914	1,109	52	26	9,143
Over \$3,000	211	252	23	228	102	118	0	0	934
Total	12,166	10,151	1,610	13,627	4,512	5,518	1,146	615	49,345

1996 Account

Amount of Monthly Benefit ¹	Option A-1	Option A-2	Option A-3	Option B-1	Option B-2	Option B-3	Survivors	Disability	Total
\$1-\$500	168	114	19	120	17	31	23	55	547
\$501-\$1,000	258	206	52	237	56	80	24	49	962
\$1,001-\$1,500	204	171	40	202	62	65	3	13	760
\$1,505-\$2,000	144	131	24	173	54	80	5	4	615
\$2,001-\$3,000	113	118	22	210	54	89	4	5	615
Over \$3,000	35	41	1	52	20	17	0	0	166
Total	922	781	158	994	263	362	59	126	3,665

¹Pension only

Summary of Benefit Options

- A-1 - Provides a monthly benefit for retiree's life. In the event the retiree dies before receiving five years of payments, the beneficiary receives the remainder of the five years (60 months) of guaranteed Defined Benefit pension payments in a lump sum.
- A-2 - Provides a monthly benefit for retiree's life. The benefit ceases upon the death of the retiree.
- A-3 - Provides a monthly benefit for retiree's life, including monthly annuitization of member's Annuity Savings Account (ASA). In the event the retiree dies before receiving five years of payments, the beneficiary will receive the remainder of the five years of guaranteed pension payments. The ASA is reduced with each monthly benefit paid; if the retiree dies before reducing the balance to \$0.00, the beneficiary will receive a single payment of the amount remaining.
- B-1 - Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 100% of the member's Defined Benefit for the remainder of the survivor's life.
- B-2 - Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 66-2/3% of the member's Defined Benefit for the remainder of the survivor's life.
- B-3 - Provides a monthly benefit for retiree's life. Upon the death of the retiree, the qualified designated survivor receives 50% of the member's Defined Benefit for the remainder of the survivor's life.
- Survivors* - Provides a monthly benefit for the surviving spouse's or dependent's life. The benefit ceases upon death of the survivor.
- Disability** - Available to members with five (5) or more years of creditable service who become disabled as determined by the Social Security Administration while teaching in Indiana.

* (of members who die while in service)

** Includes Classroom Disability – Provides a benefit of \$125 per month plus \$5 for each additional year of TRF-covered service over five years

Retired Members

Schedule of Average Benefit Payments by Service at Retirement

Pre-1996 Account

	Years of Service at Retirement						Total
	<10	10-14	15-19	20-24	25-29	30+	
Avg. Monthly Defined Benefit Pension	\$405	\$258	\$517	\$834	\$1,187	\$1,793	\$1,453
Avg. Monthly Annuity	\$57	\$108	\$104	\$128	\$159	\$225	\$191
Avg. Final Avg. Salary at Retirement	\$24,193	\$22,426	\$35,702	\$43,604	\$48,801	\$55,636	\$50,855
Number of Benefit Recipients	36	1,185	3,720	5,541	7,987	30,876	49,345

1996 Account

	Years of Service at Retirement						Total
	<10	10-14	15-19	20-24	25-29	30+	
Avg. Monthly Defined Benefit Pension	\$263	\$450	\$730	\$1,041	\$1,426	\$2,158	\$1,366
Avg. Monthly Annuity	\$23	\$71	\$102	\$124	\$200	\$230	\$162
Avg. Final Avg. Salary at Retirement	\$39,665	\$44,142	\$51,558	\$57,665	\$61,752	\$70,633	\$59,995
Number of Benefit Recipients	36	406	822	537	504	1,360	3,665

Reconciliation of Participant Data: Total Fund

	Active	Inactive Vested	Inactive Nonvested	Survivor	Disabled	Retired	Beneficiary	Total
6/30/2012 Valuation	70,573	6,367	13,322	1,215	725	44,501	3,530	140,233
Disabled	(13)	(31)			44			0
Retired	(3,278)	(749)				4,027		0
Terminated with Vested Benefit	(1,401)	1,401						0
Terminated, due a Refund	(1,335)		1,335					0
Died with Survivor	(16)	(11)		16	(12)	(304)	327	0
Died, no Survivor*	(6)	(86)		(26)	(23)	(866)	(180)	(1,187)
Refunded*	(247)	(176)	(1,298)					(1,721)
Forfeited*		(4)	(743)					(747)
Dropped from Database	(25)	(60)	(18)					(103)
Rehired	1,288	(264)	(1,024)					0
Status Corrections		30	(37)		5	2		0
Data Corrections			156		2	13	14	185
New Hires	4,874							4,874
6/30/2013 Valuation	70,414	6,417	11,693	1,205	741	47,373	3,691	141,534

* No remaining benefit obligation in the plan.

Reconciliation of Participant Data: Pre-1996 Account

	Active	Inactive Vested	Inactive Nonvested	Survivor	Disabled	Retired	Beneficiary	Total
6/30/2012 Valuation	22,688	3,382	794	1,161	613	41,749	3,477	73,864
Disabled	(10)	(21)			31			0
Retired	(2,780)	(572)				3,352		0
Terminated with Vested Benefit	(818)	818						0
Terminated, due a Refund	(37)		37					0
Died with Survivor	(12)	(8)		11	(10)	(299)	318	0
Died, no Survivor*	(4)	(85)		(26)	(19)	(853)	(179)	(1,166)
Refunded*	(29)	(73)	(139)					(241)
Forfeited*		(4)	(100)					(104)
Dropped from Database	(12)	(32)	(12)					(56)
Rehired	125	(70)	(55)					0
Status Corrections		(22)	20			2		0
Data Corrections			5			5	12	22
Moved to Pre-1996 Account	5	1						6
Moved from Pre-1996 Account	(1)		(4)					(5)
New Hires	95							95
6/30/2013 Valuation	19,210	3,314	546	1,146	615	43,956	3,628	72,415

* No remaining benefit obligation in the plan.

Reconciliation of Participant Data: 1996 Account

	Active	Inactive Vested	Inactive Nonvested	Survivor	Disabled	Retired	Beneficiary	Total
6/30/2012 Valuation	47,885	2,985	12,528	54	112	2,752	53	66,369
Disabled	(3)	(10)			13			0
Retired	(498)	(177)				675		0
Terminated with Vested Benefit	(582)	582						0
Terminated, due a Refund	(1,298)		1,298					0
Died with Survivor	(4)	(3)		5	(2)	(5)	9	0
Died, no Survivor*	(2)	(1)			(4)	(13)	(1)	(21)
Refunded*	(218)	(103)	(1,159)					(1,480)
Forfeited*			(643)					(643)
Dropped from Database	(13)	(28)	(6)					(47)
Rehired	1,157	(194)	(963)					0
Status Corrections		52	(56)		5	(1)		0
Data Corrections			151		2	8	2	163
Moved to 1996 Account	3		1			1		5
Moved from 1996 Account	(2)		(4)					(6)
New Hires	4,779							4,779
6/30/2013 Valuation	51,204	3,103	11,147	59	126	3,417	63	69,119

* No remaining benefit obligation in the plan.

Closed Group Projection: Pre-1996 Account

The schedules on the following pages for the Pre-1996 Account were produced by means of an actuarial projection.

Whereas actuarial valuations provide a snapshot of the Retirement Fund as of a given date, actuarial projections provide a moving picture of Retirement Fund activities. The projected active and retired groups are developed from year to year by applying assumptions regarding pre-retirement withdrawal from service, retirements, deaths, and disabilities. Projected information regarding plan activity produces an expected future benefit payment stream.

Projection results are useful in demonstrating changing relationships among key elements affecting system financial activity. For example, the relationship between annual benefits paid and assets will change over time. Projections are not predictions of specific future events and do not provide numeric precision in absolute terms. The future pension benefits shown in the table are estimates. Actual payments will likely differ from the amounts shown; however, understanding the relative growth is critical.

Closed Group Projection: Pre-1996 Account

\$Millions

Fiscal Year	Active Members		Retired and Inactive Vested Members	
	Number*	Payroll*	Number*	Pension Benefits Paid*
2014	19,210	\$ 1,383.4	52,659	\$ 925.5
2015	17,208	1,275.5	53,490	934.3
2016	15,386	1,173.0	54,102	969.6
2017	13,708	1,074.5	54,519	1,003.0
2018	12,162	979.9	54,754	1,033.5
2019	10,749	889.9	54,764	1,058.2
2020	9,460	804.7	54,606	1,079.3
2021	8,287	724.2	54,282	1,097.0
2022	7,227	648.7	53,796	1,111.3
2023	6,266	577.8	53,165	1,121.9
2024	5,397	511.3	52,395	1,128.8
2025	4,613	449.1	51,493	1,132.6
2026	3,908	390.6	50,466	1,132.8
2027	3,273	336.0	49,320	1,129.5
2028	2,703	284.9	48,062	1,122.5
2029	2,202	238.2	46,690	1,111.5
2030	1,767	196.4	45,204	1,096.9
2031	1,391	158.7	43,618	1,077.9
2032	1,073	125.8	41,931	1,054.9
2033	807	97.2	40,156	1,027.3
2034	594	73.4	38,296	995.6
2035	426	54.2	36,366	960.1
2036	298	38.9	34,379	921.4
2037	204	27.4	32,253	880.0
2038	136	18.7	30,306	836.3
2039	87	12.4	28,258	791.0
2040	54	7.8	26,228	744.6
2041	30	4.5	24,234	697.7
2042	15	2.3	22,291	650.7
2043	6	0.9	20,417	604.1

**All number counts are as of the beginning of the fiscal year. Payroll and benefits paid are expected amounts during the fiscal year. Pension benefits paid reflects the expected defined benefit pension payments (excluding ASA annuities).*

Projections are intended to demonstrate the pattern of future activities and should not be viewed as a prediction of specific dollar amounts in any year.

Closed Group Projection: Pre-1996 Account (Continued)

\$Millions

Fiscal Year	Active Members		Retired and Inactive Vested Members	
	Number*	Payroll*	Number*	Pension Benefits Paid*
2044	2	\$ 0.3	18,623	\$ 558.5
2045	1	0.1	16,920	514.2
2046	-	0.1	15,319	471.7
2047	-	0.1	13,823	431.1
2048	-	0.1	12,435	392.7
2049	-	-	11,154	356.4
2050	-	-	9,976	322.3
2051	-	-	8,899	290.5
2052	-	-	7,917	260.8
2053	-	-	7,023	233.2
2054	-	-	6,211	207.7
2055	-	-	5,476	184.1
2056	-	-	4,810	162.4
2057	-	-	4,210	142.5
2058	-	-	3,670	124.3
2059	-	-	3,185	107.8
2060	-	-	2,751	92.8
2061	-	-	2,366	79.4
2062	-	-	2,025	67.5
2063	-	-	1,725	57.0

**All number counts are as of the beginning of the fiscal year. Payroll and benefits paid are expected amounts during the fiscal year. Pension benefits paid reflects the expected defined benefit pension payments (excluding ASA annuities).*

Projections are intended to demonstrate the pattern of future activities and should not be viewed as a prediction of specific dollar amounts in any year.

Summary of Benefit Provisions

Changes in Plan Provisions since June 30, 2012

In September 2013, retirees were paid a service-related lump sum (a "13th check") ranging from \$150 to \$450.

Regular Retirement

Eligibility

Age 65 with ten years of service, or age 60 with 15 years of service, or if age is at least 55 and the sum of age plus credited service is at least 85.

Annual Amount

State pension equal to total service times 1.1% of Average Annual Compensation.

Early Retirement

Eligibility

Age 50 with 15 years of service.

Annual Amount

State pension is computed as regular retirement benefit, but reduced for each month between age at early retirement and attainment of age 65. The age reduction factor is calculated as the sum of the following:

- 1/10 of 1% for each month from age 60 to 65.
- 5/12 of 1% for each month from age at early retirement to 60.

Deferred Retirement

Eligibility

Ten years of service. Benefit commences at regular or early retirement eligibility.

Annual Amount

Computed as a regular retirement benefit with state pension based on service and Average Annual Compensation at termination.

Disability Retirement

Regular Disability Benefit:

Eligibility

Five years of service.

Annual Amount

\$125 per month plus \$5 per month for each year of service credit over five years.

Disability Retirement Benefit:

Eligibility

Five years of service and determined to be disabled by the Social Security Administration. Annual verification of Social Security disability is required.

Annual Amount

Computed as a regular retirement benefit using creditable service to the date of disability and without reduction for early retirement. The minimum benefit is \$180 per month.

Summary of Benefit Provisions

Death Before Retirement

Eligibility	15 years of service. Spouse to whom member had been married for two or more years is automatically eligible, or a dependent may be designated as beneficiary.
Annual Amount	Computed as regular retirement benefit but reduced in accordance with a 100% joint and survivor election.

Benefit Increases After Retirement

No automatic increases after retirement are provided. Periodically, unscheduled increases have been made. In September 2013, retirees were paid a service-related lump sum ranging from \$150 to \$450.

Average Annual Compensation

Average of highest five years of compensation. Years do not need to be consecutive.

Member Contributions

All Fund members are required by state law to contribute 3% of salary contributions to their Annuity Savings Account. These 3% contributions are generally "picked up" by the employer and contributed on a pre-tax basis on behalf of the employee. Extra voluntary contributions by the member are also possible, but on a post-tax basis. At retirement, there are six alternatives for receiving the proceeds of this account, including lump sums, full and partial rollovers, full and partial annuitization of the balance, and deferred distribution.

Forms of Benefit Payment (Pension)

The normal form of benefit payment (Option A-1) is a single life annuity with a five-year certain period. There are five optional forms of payment available, as listed below. Additionally, members retiring between ages 50 and 62 may integrate their pension benefit with their Social Security benefit by choosing Social Security Integration (Option A-4) in conjunction with the normal form or any other optional form selected. Optional forms of payment are calculated on an actuarially equivalent basis.

- Option A-2: Straight Life benefit with no certain period
- Option A-3: Modified Cash Refund Annuity (operates in conjunction with the Annuity Savings Account)
- Option B-1: 100% Survivorship
- Option B-2: 66 2/3% Survivorship
- Option B-3: 50% Survivorship

State law provides for actuarially-adjusted and re-calculated benefits based on a new optional form election in the event of the death of the member's spouse after retirement.

Optional forms of benefit are calculated based on 7.5% interest with a 40%/60% unisex blend of the 1983 Group Annuity Male Mortality table set back three years and the 1983 Group Annuity Male Mortality table set back seven years.

Summary of Actuarial Assumptions and Methods

The assumptions used in this valuation reflect the study of experience covering the period July 1, 2007 through June 30, 2011.

Interest Rate / Investment Return	6.75% per year, compounded annually (net of administrative and investment expenses).
Pay Increase Assumption	Sample increases are shown in a table on the following pages. The assumption for each year of service consists of a merit and/or seniority increase and 3.0% for price inflation.
Total Active Member Payroll	Assumed to annually increase 9% for the 1996 Account and decrease according to the projection in the Payout Projections section for the Pre-1996 Account for purposes of calculating the projected contribution for the 2015 fiscal year.
Price Inflation	3.0% per year. Price inflation is not directly tied to benefits; however, it is a component of the economic model used to determine total wage inflation.
Mortality <i>Healthy</i>	2013 IRS Static Mortality Table projected an additional 5 years (gender specific).
<i>Disabled</i>	2013 IRS Static Mortality Table projected an additional 5 years (gender specific).
Retirement	Probabilities are shown in tables on the following pages.
Withdrawal	Sample probabilities are shown in tables on the following pages.
Disability	Sample probabilities are shown in a table on the following pages.
Actuarial Cost Method	Entry Age Normal (level percent of pay) method, with a 30-year, closed, level dollar amortization of the Unfunded Accrued Liability arising from all sources including actuarial gains and losses.
Asset Valuation Method	The Actuarial Value of Assets recognizes investment gains and losses in equal installments over four years. However, the Actuarial Value is limited to no more than 20% greater than or 20% less than the Market Value of Assets. Investment experience on ASA account balances is not smoothed.
Marriage Assumption	100% of members are assumed to be married for purposes of valuing death-in-service benefits. Male spouses are assumed to be three years older than female spouses.
Pay Increase Timing	Beginning of (fiscal) year. Payroll amounts stated in the valuation data are amounts projected to be paid during the current year.
Decrement Timing	Decrements are assumed to occur at the beginning of the year.

Summary of Actuarial Assumptions and Methods

Other	Disability and withdrawal decrements do not operate after member reaches retirement eligibility. Only the withdrawal and death decrements operate during the first ten years of service.
Miscellaneous Adjustments	The calculated liabilities and normal costs were increased by 1% to account for the inclusion of unused sick leave in the calculation of Average Annual Compensation.
Actuarial Equivalence Basis for Optional Forms of Payment	7.5% interest with a 40%/60% unisex blend of the 1983 Group Annuity Male Mortality table set back three years and the 1983 Group Annuity Male Mortality Table set back seven years.
Explicit Expense Load	None.
COLA Assumption	1.0% compounded annually on pension portion.
Cost for ASA Conversions	The cost associated with the conversion of future ASA account balances to annuities at 7.50% versus the valuation interest rate of 6.75% was recognized in the June 30, 2013 valuation, which is a change from the prior methodology of recognizing any cost as it occurred. The liability associated with anticipated future ASA conversions was subsequently eliminated with the Board decision to modify ASA annuitizations starting October 1, 2014.
Employee Census and Asset Data	The member census data and the asset information for this valuation were furnished by the Chief Financial Officer and Staff. We did not audit the information provided, but we did review it thoroughly for reasonableness and compared it with the prior year's submission for consistency.

The actuarial valuation computations were made under the supervision of a Member of the American Academy of Actuaries (MAAA).

Summary of Actuarial Assumptions and Methods

Probabilities of Age and Service Retirement

Regular Retirement		Rule of 85 Retirement		Early Retirement	
Age	Probability	Age	Probability	Age	Probability
				50-53	0.020
				54	0.050
		55	0.100	55	0.050
		56	0.100	56	0.050
		57	0.100	57	0.050
		58	0.125	58	0.050
		59	0.150	59	0.100
60	0.175	60	0.175		
61	0.200	61	0.200		
62	0.250	62	0.250		
63	0.250	63	0.250		
64	0.250	64	0.250		
65	0.300	65	0.300		
66	0.300	66	0.300		
67	0.300	67	0.300		
68	0.300	68	0.300		
69	0.300	69	0.300		
70	1.0000	70	1.0000		

Probabilities of Disability

Attained Age	Age-Based	
	Male	Female
25	0.0001	0.0001
30	0.0001	0.0001
35	0.0001	0.0001
40	0.0001	0.0001
45	0.0002	0.0002
50	0.0005	0.0005
55	0.0009	0.0009
60	0.0010	0.0010

Summary of Actuarial Assumptions and Methods

Probabilities of Withdrawal

Years of Service	Service-Based	
	Male	Female
0	0.3500	0.3500
1	0.1400	0.1400
2	0.1100	0.1100
3	0.0800	0.0900
4	0.0600	0.0800
5	0.0450	0.0700
6	0.0400	0.0600
7	0.0400	0.0500
8	0.0350	0.0450
9	0.0350	0.0400

Attained Age	Age-Based*	
	Male	Female
30	0.0200	0.0350
35	0.0200	0.0300
40	0.0200	0.0200
45	0.0200	0.0200
50	0.0200	0.0200
55	0.0200	0.0200
60	0.0200	0.0200

**Age-Based rates apply only if 10 or more years of service.*

Summary of Actuarial Assumptions and Methods

Pay Increase Assumption

Years of Service	Merit & Seniority	Inflation	Total
1	9.50%	3.00%	12.50%
5	4.00%	3.00%	7.00%
10	2.75%	3.00%	5.75%
15	1.50%	3.00%	4.50%
20	0.25%	3.00%	3.25%
25	0.00%	3.00%	3.00%
30	0.00%	3.00%	3.00%
35	0.00%	3.00%	3.00%
40	0.00%	3.00%	3.00%

Definitions of Technical Terms

Accrued Service	Service credited under the system that was rendered before the date of the actuarial valuation.
Accrued Liability	The difference between the actuarial present value of future benefit payments and the actuarial present value of future normal costs. Also referred to as “actuarial accrued liability” or “past service liability”.
Actuarial Assumptions	Estimates of expected future experience with respect to rates of mortality, disability, turnover, retirement, rate of investment return, and pay increases. Decrement assumptions (rates of mortality, disability, turnover, and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (pay increases and investment return) consist of the underlying rates in an inflation-free environment plus a provision for a long-term average rate of inflation.
Actuarial Cost Method	A mathematical budgeting procedure for allocating the dollar amount of the “actuarial present value of future benefit payments” between future normal costs and actuarial accrued liabilities. Sometimes referred to as the “actuarial funding method”.
Actuarial Equivalent	One series of payments is said to be actuarially equivalent to another series of payments if the two series have the same actuarial present value.
Actuarial Gain / (Loss)	The difference between actual unfunded actuarial accrued liability and anticipated unfunded actuarial accrued liability — during the period between two valuation dates. It is a measurement of the difference between actual and expected experience.
Actuarial Present Value	The single amount now that is equal to a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment.
Amortization	Paying off a present value with periodic payments.
Normal Cost	The portion of the actuarial present value of future benefits that is assigned to the current year by the actuarial cost method. Sometimes referred to as “current cost”.
Unfunded Accrued Liability	The difference between the accrued liability and the actuarial value of assets. Sometimes referred to as “unfunded past service liability” or “unfunded actuarial accrued liability” or simply as “unfunded liability”.

The Actuarial Valuation Process

The **actuarial valuation** is the mathematical process by which a contribution rate is determined. The flow of activity constituting the valuation may be summarized as follows:

Covered Person Data: Furnished by the Plan Administrator

Retired Members and Beneficiaries Now Receiving Benefits
Former Employees with Vested Benefits Not Yet Payable
Active Members

+ **Asset Data (Cash and Investments):** Furnished by the Plan Administrator

+ **Estimates of Future Experience (Actuarial Assumptions):** Established by the Board of Trustees after Consulting with the Actuary

+ **Funding Method:** The Allocation of Employer Costs to Past Service, Current Service, and Future Service

+ **Mathematically Combining the Assumptions, the Funding Method, and the Data**

= **Determination of:**

Plan Funded Status and Employer Contribution Rate